

<b>Aeronautics Educator Guide</b>			
<b>2006 21st Century Science</b>			
<b>Standards and Objectives</b>			
<b>West Virginia 21st Century Science</b>			
<b>Grade 2</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Air Engines (12-16)	WV	SCI.2.SC.O.2.1.01	interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.
Air Engines (12-16)	WV	SCI.2.SC.O.2.1.06	measure the length and width of various objects using standard and non-standard units (e.g., metric ruler, paper clips, or counting bears).
Air Engines (12-16)	WV	SCI.2.SC.O.2.2.10	compare the effects of force on the motion of an object.
Air Engines (12-16)	WV	SCI.2.SC.O.2.2.14	observe and describe different types of precipitation.
Rotor Motor (69-75)	WV	SCI.2.SC.O.2.1.01	interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.
Flight: Interdisciplinary Learning Activities (76-79)	WV	SCI.2.SC.O.2.2.13	identify the effects of wind movement.
Making Time Fly (80-86)	WV	SCI.2.SC.O.2.1.02	compare the lives and discoveries of scientists of different cultures and backgrounds.
Making Time Fly (80-86)	WV	SCI.2.SC.O.2.1.08	design and conduct simple investigations; observe, collect and record information using a variety of classification systems; describe trends of data; and make predictions based on that data (e.g., seasonal changes and plants or temperature and weather).
Where is North? The Compass Can Tell Us (87-90)	WV	SCI.2.SC.O.2.1.01	interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.
Where is North? The Compass Can Tell Us (87-90)	WV	SCI.2.SC.O.2.1.04	demonstrate curiosity, initiative and creativity by observing, classifying, comparing and analyzing natural objects in the environment.
Where is North? The Compass Can Tell Us (87-90)	WV	SCI.2.SC.O.2.1.05	manipulate scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, balance, thermometer, metric ruler, magnets, weather instruments, or calculators).
Where is North? The Compass Can Tell Us (87-90)	WV	SCI.2.SC.O.2.1.08	design and conduct simple investigations; observe, collect and record information using a variety of classification systems; describe trends of data; and make predictions based on that data (e.g., seasonal changes and plants or temperature and weather).
Where is North? The Compass Can Tell Us (87-90)	WV	SCI.2.SC.O.2.2.07	demonstrate that a magnet can attract or repel objects.

Dunked Napkin ( 17-22)	WV	SCI.2.SC.O.2.1.01	interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.
Dunked Napkin ( 17-22)	WV	SCI.2.SC.O.2.1.05	manipulate scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, balance, thermometer, metric ruler, magnets, weather instruments, or calculators).
Dunked Napkin ( 17-22)	WV	SCI.2.SC.O.2.2.06	identify materials as a solid, a liquid or a gas and recognize that matter takes up space, and can change from one state to another.
Paper Bag Mask (23-28)	WV	SCI.2.SC.O.2.1.01	interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.
Paper Bag Mask (23-28)	WV	SCI.2.SC.O.2.1.04	demonstrate curiosity, initiative and creativity by observing, classifying, comparing and analyzing natural objects in the environment.
Paper Bag Mask (23-28)	WV	SCI.2.SC.O.2.1.06	measure the length and width of various objects using standard and non-standard units (e.g., metric ruler, paper clips, or counting bears).
Paper Bag Mask (23-28)	WV	SCI.2.SC.O.2.2.06	identify materials as a solid, a liquid or a gas and recognize that matter takes up space, and can change from one state to another.
Wind in Your Socks) (29-35)	WV	SCI.2.SC.O.2.1.01	interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.
Wind in Your Socks) (29-35)	WV	SCI.2.SC.O.2.1.05	manipulate scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, balance, thermometer, metric ruler, magnets, weather instruments, or calculators).
Wind in Your Socks) (29-35)	WV	SCI.2.SC.O.2.1.06	measure the length and width of various objects using standard and non-standard units (e.g., metric ruler, paper clips, or counting bears).
Wind in Your Socks) (29-35)	WV	SCI.2.SC.O.2.2.13	identify the effects of wind movement.
Wind in Your Socks) (29-35)	WV	SCI.2.SC.O.2.2.14	observe and describe different types of precipitation.
Wind in Your Socks) (29-35)	WV	SCI.2.SC.O.2.3.03	observe that changes occur gradually, repetitively, or randomly within the environment.
Wind in Your Socks) (29-35)	WV	SCI.2.SC.O.2.3.04	recognize that common objects and events incorporate science (e.g., CD players, Velcro, or weather) to solve human problems and enhance the quality of life.
Air: Interdisciplinary Learning Activities (36-39)	WV	SCI.2.SC.O.2.2.13	identify the effects of wind movement.
Bag Balloons (40-43)	WV	SCI.2.SC.O.2.1.01	interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.
Sled Kite (44-51)	WV	SCI.2.SC.O.2.1.01	interpret science as the human's search for an understanding of the world by asking questions about themselves and their world.

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<b>2006 21st Century Science</b>			
<b>Standards and Objectives</b>			
<b>West Virginia 21st Century Science</b>			
<b>Grade 3</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Air Engines (12-16)	WV	SCI.3.SC.O.3.1.01	recognize that scientific explanations may lead to new discoveries (e.g., new knowledge leads to new questions).
Air Engines (12-16)	WV	SCI.3.SC.O.3.1.04	demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.
Air Engines (12-16)	WV	SCI.3.SC.O.3.1.09	apply mathematical skills and use metric units in measurements.
Air Engines (12-16)	WV	SCI.3.SC.O.3.2.04	observe and describe relationships among organisms and predict the effect of adverse factors.
Air Engines (12-16)	WV	SCI.3.SC.O.3.2.11	recognize that it takes work to move objects over a distance.
Air Engines (12-16)	WV	SCI.3.SC.O.3.2.12	examine the relationships between speed, distance, and time.
Air Engines (12-16)	WV	SCI.3.SC.O.3.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of changes.
Rotor Motor (69-75)	WV	SCI.3.SC.O.3.1.04	demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.
Rotor Motor (69-75)	WV	SCI.3.SC.O.3.1.11	identify and control variables.
Flight: Interdisciplinary Learning Activities (76-79)	WV	SCI.3.SC.O.3.2.12	examine the relationships between speed, distance, and time.
Flight: Interdisciplinary Learning Activities (76-79)	WV	SCI.3.SC.O.3.2.22	identify geographical features using a model or map.
Where is North? The Compass Can Tell Us (87-90)	WV	SCI.3.SC.O.3.1.04	demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.
Let's Build a Table Top Airport (91-96)	WV	SCI.3.SC.O.3.3.02	use models as representations of real things.
Plan to Fly There (97-106)	WV	SCI.3.SC.O.3.2.12	examine the relationships between speed, distance, and time.
We Can Fly, You and I: Interdisciplinary Learning (107-108)	WV	SCI.3.SC.O.3.3.02	use models as representations of real things.
Dunked Napkin ( 17-22)	WV	SCI.3.SC.O.3.1.01	recognize that scientific explanations may lead to new discoveries (e.g., new knowledge leads to new questions).
Dunked Napkin ( 17-22)	WV	SCI.3.SC.O.3.1.04	demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.

Dunked Napkin ( 17-22)	WV	SCI.3.SC.O.3.1.07	use scientific instruments, technology, and everyday materials to investigate the natural world.
Dunked Napkin ( 17-22)	WV	SCI.3.SC.O.3.1.10	interpret data presented in a table, graph, map or diagram and use it to answer questions and make predictions and inferences based on patterns of evidence.
Dunked Napkin ( 17-22)	WV	SCI.3.SC.O.3.2.09	investigate the reflection and refraction of light by objects.
Dunked Napkin ( 17-22)	WV	SCI.3.SC.O.3.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of changes.
Paper Bag Mask (23-28)	WV	SCI.3.SC.O.3.1.01	recognize that scientific explanations may lead to new discoveries (e.g., new knowledge leads to new questions).
Paper Bag Mask (23-28)	WV	SCI.3.SC.O.3.1.04	demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.
Paper Bag Mask (23-28)	WV	SCI.3.SC.O.3.1.09	apply mathematical skills and use metric units in measurements.
Paper Bag Mask (23-28)	WV	SCI.3.SC.O.3.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of changes.
Wind in Your Socks) (29-35)	WV	SCI.3.SC.O.3.1.01	recognize that scientific explanations may lead to new discoveries (e.g., new knowledge leads to new questions).
Wind in Your Socks) (29-35)	WV	SCI.3.SC.O.3.1.04	demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.
Wind in Your Socks) (29-35)	WV	SCI.3.SC.O.3.1.09	apply mathematical skills and use metric units in measurements.
Wind in Your Socks) (29-35)	WV	SCI.3.SC.O.3.1.10	interpret data presented in a table, graph, map or diagram and use it to answer questions and make predictions and inferences based on patterns of evidence.
Wind in Your Socks) (29-35)	WV	SCI.3.SC.O.3.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of changes.
Bag Balloons (40-43)	WV	SCI.3.SC.O.3.1.04	demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.
Sled Kite (44-51)	WV	SCI.3.SC.O.3.1.01	recognize that scientific explanations may lead to new discoveries (e.g., new knowledge leads to new questions).
Sled Kite (44-51)	WV	SCI.3.SC.O.3.1.04	demonstrate curiosity, initiative and creativity by planning and conducting simple investigations.
Sled Kite (44-51)	WV	SCI.3.SC.O.3.1.11	identify and control variables.
Right Flight (52-59)	WV	SCI.3.SC.O.3.3.02	use models as representations of real things.
Delta Wing Glider (60-68)	WV	SCI.3.SC.O.3.3.02	use models as representations of real things.
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<b>Grade 4</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Air Engines (12-16)	WV	SCI.4.SC.O.4.1.01	explain how new discoveries lead to changes in scientific knowledge.
Air Engines (12-16)	WV	SCI.4.SC.O.4.1.04	demonstrate curiosity, initiative and creativity by developing questions that lead to investigations; designing simple experiments; and trusting observations of discoveries when trying new tasks and skills.
Air Engines (12-16)	WV	SCI.4.SC.O.4.1.13	apply mathematical skills and use metric units in measurements and calculations.
Air Engines (12-16)	WV	SCI.4.SC.O.4.2.22	predict and investigate the motion of an object if the applied force is changed.
Air Engines (12-16)	WV	SCI.4.SC.O.4.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of change.
Rotor Motor (69-75)	WV	SCI.4.SC.O.4.1.04	demonstrate curiosity, initiative and creativity by developing questions that lead to investigations; designing simple experiments; and trusting observations of discoveries when trying new tasks and skills.
Rotor Motor (69-75)	WV	SCI.4.SC.O.4.2.22	predict and investigate the motion of an object if the applied force is changed.
Where is North? The Compass Can Tell Us (87-90)	WV	SCI.4.SC.O.4.1.04	demonstrate curiosity, initiative and creativity by developing questions that lead to investigations; designing simple experiments; and trusting observations of discoveries when trying new tasks and skills.
Where is North? The Compass Can Tell Us (87-90)	WV	SCI.4.SC.O.4.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of change.
We Can Fly, You and I: Interdisciplinary Learning (107-108)	WV	SCI.4.SC.O.4.3.10	describe the positive and negative consequences of the application of technology on personal health and the environment.
Dunked Napkin ( 17-22)	WV	SCI.4.SC.O.4.1.01	explain how new discoveries lead to changes in scientific knowledge.
Dunked Napkin ( 17-22)	WV	SCI.4.SC.O.4.1.04	demonstrate curiosity, initiative and creativity by developing questions that lead to investigations; designing simple experiments; and trusting observations of discoveries when trying new tasks and skills.
Dunked Napkin ( 17-22)	WV	SCI.4.SC.O.4.1.07	use scientific instruments, technology and everyday materials to investigate the natural world.
Dunked Napkin ( 17-22)	WV	SCI.4.SC.O.4.1.10	establish variables and controls in an experiment; test variables through experimentation.
Dunked Napkin ( 17-22)	WV	SCI.4.SC.O.4.2.22	predict and investigate the motion of an object if the applied force is changed.
Paper Bag Mask (23-28)	WV	SCI.4.SC.O.4.1.01	explain how new discoveries lead to changes in scientific knowledge.

Paper Bag Mask (23-28)	WV	SCI.4.SC.O.4.1.04	demonstrate curiosity, initiative and creativity by developing questions that lead to investigations; designing simple experiments; and trusting observations of discoveries when trying new tasks and skills.
Paper Bag Mask (23-28)	WV	SCI.4.SC.O.4.1.10	establish variables and controls in an experiment; test variables through experimentation.
Paper Bag Mask (23-28)	WV	SCI.4.SC.O.4.1.13	apply mathematical skills and use metric units in measurements and calculations.
Paper Bag Mask (23-28)	WV	SCI.4.SC.O.4.2.22	predict and investigate the motion of an object if the applied force is changed.
Paper Bag Mask (23-28)	WV	SCI.4.SC.O.4.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of change.
Wind in Your Socks) (29-35)	WV	SCI.4.SC.O.4.1.04	demonstrate curiosity, initiative and creativity by developing questions that lead to investigations; designing simple experiments; and trusting observations of discoveries when trying new tasks and skills.
Wind in Your Socks) (29-35)	WV	SCI.4.SC.O.4.1.11	interpret data presented in a table, graph, or diagram and use it to answer questions and make decisions.
Wind in Your Socks) (29-35)	WV	SCI.4.SC.O.4.1.13	apply mathematical skills and use metric units in measurements and calculations.
Wind in Your Socks) (29-35)	WV	SCI.4.SC.O.4.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of change.
Bag Balloons (40-43)	WV	SCI.4.SC.O.4.1.04	demonstrate curiosity, initiative and creativity by developing questions that lead to investigations; designing simple experiments; and trusting observations of discoveries when trying new tasks and skills.
Sled Kite (44-51)	WV	SCI.4.SC.O.4.1.01	explain how new discoveries lead to changes in scientific knowledge.
Sled Kite (44-51)	WV	SCI.4.SC.O.4.3.03	observe that changes occur gradually, repetitively, or randomly within the environment and question causes of change.
Right Flight (52-59)	WV	SCI.4.SC.O.4.3.02	create models as representations of real things.
Delta Wing Glider (60-68)	WV	SCI.4.SC.O.4.3.02	create models as representations of real things.